

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
27 January 2005 (27.01.2005)

PCT

(10) International Publication Number  
**WO 2005/007676 A2**

- (51) International Patent Classification<sup>7</sup>: **C07K**
- (21) International Application Number:  
PCT/US2004/022134
- (22) International Filing Date: 9 July 2004 (09.07.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/486,350 10 July 2003 (10.07.2003) US
- (71) Applicants and  
(72) Inventors: **RAJADHYAKSHA, V., J.** [US/US]; 27436 Esquina, Mission Viejo, CA 92691 (US). **LAHEY, Thomas, P.** [US/US]; 8 Pacific Crest, Laguna Niguel, CA 92677 (US).
- (74) Agent: **BUYAN, Robert, D.**; Stout, Uxa, Buyan & Mullins, LLP., 4 Venture, Suite 300, Irvine, CA 92618 (US).
- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- *without international search report and to be republished upon receipt of that report*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: GLYCOPEPTIDES FOR THE TREATMENT OF ALS AND OTHER METABOLIC AND AUTOIMMUNE DISORDERS

(57) Abstract: New compositions and methods for treating patients suffering from Amyotrophic Lateral Sclerosis (ALS) and other metabolic and autoimmune disorders, which include glycopeptides such as N-acetyl-D-glucosaminyl ( $\beta$ 1-4)-N-Acetyl-muramyl-L-alanyl-D-isoglutamine (GMDP) and peptide analog -L-alanyl-D-glutamic acid (GMDP-A) of a least 98% purity administered either alone, or in combination with a flavone such as luteolin and/or an isoflavone such as genistein, optionally in combination with a flavonol glycoside such as isoquercitrin or rutin. The high purity glycopeptides have a decreased amount immunogenic impurities and demonstrate a synergistic effect when combined with luteolin and/or genistein in presence of isoquercitrin.

WO 2005/007676 A2